

THIS PROJECT INVOLVES THE INSTALLATION OF COUNTDOWN PEDESTRIAN SIGNAL HEADS, IP-BASED VIDEO DETECTION CAMERAS AND ACCESSIBLE PEDESTRIAN PUSHBUTTONS AND SIGNS AT THE INTERSECTIONS OF MD 100 EASTBOUND RAMP AT OAKWOOD ROAD AND MD 100 WESTBOUND RAMP AT OAKWOOD ROAD. THE EXISTING SIZE 6 CABINET WILL BE REPLACED WITH A SIZE 8 CABINET INCLUDING UPS BATTERY BACKUP. MD 100 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

THE INTERSECTIONS WILL CONTINUE TO OPERATE IN A NEMA SEVEN-PHASE (TWO OVERLAPS) FULL-TRAFFIC-ACTUATED MODE WITH CONCURRENT PEDESTRIAN PHASES FOR BOTH WEST LEGS AND AN ALTERNATE PEDESTRIAN PHASE FOR THE NORTH LEG OF THE MD 100 WESTBOUND RAMP INTERSECTION. NORTHBOUND AND SOUTHBOUND LEFT-TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING, AND THE EASTBOUND AND WESTBOUND APPROACHES AT THE MD 100 WESTBOUND RAMP INTERSECTION OPERATE IN SPLIT PHASING. THE CONTROLLER FOR BOTH INTERSECTIONS IS LOCATED AT THE MD 100 EASTBOUND RAMP INTERSECTION.

THE EXISTING TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE REMOVED. A NEW FULL-TRAFFIC-ACTUATED EIGHT-PHASE TRAFFIC SIGNAL CONTROLLER WITH UPS BATTERY BACKUP HOUSED IN A NEMA SIZE 'S' BASE MOUNTED CABINET SHALL BE FURNISHED BY SHA AND INSTALLED BY THE CONTRACTOR. 2-WIRE APS CENTRAL CONTROL UNITS SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA. THE EXISTING POLE MOUNTED DETECTOR CABINET LOCATED AT THE MD 100 WESTBOUND RAMP'S INTERSECTION SHALL REMAIN.

APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 100 WESTBOUND ON-RAMP:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS RAMP AT OAKWOOD. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS OAKWOOD ROAD:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS OAKWOOD AT RAMP. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS MD 100 EASTBOUND OFF-RAMP:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS RAMP AT OAKWOOD. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

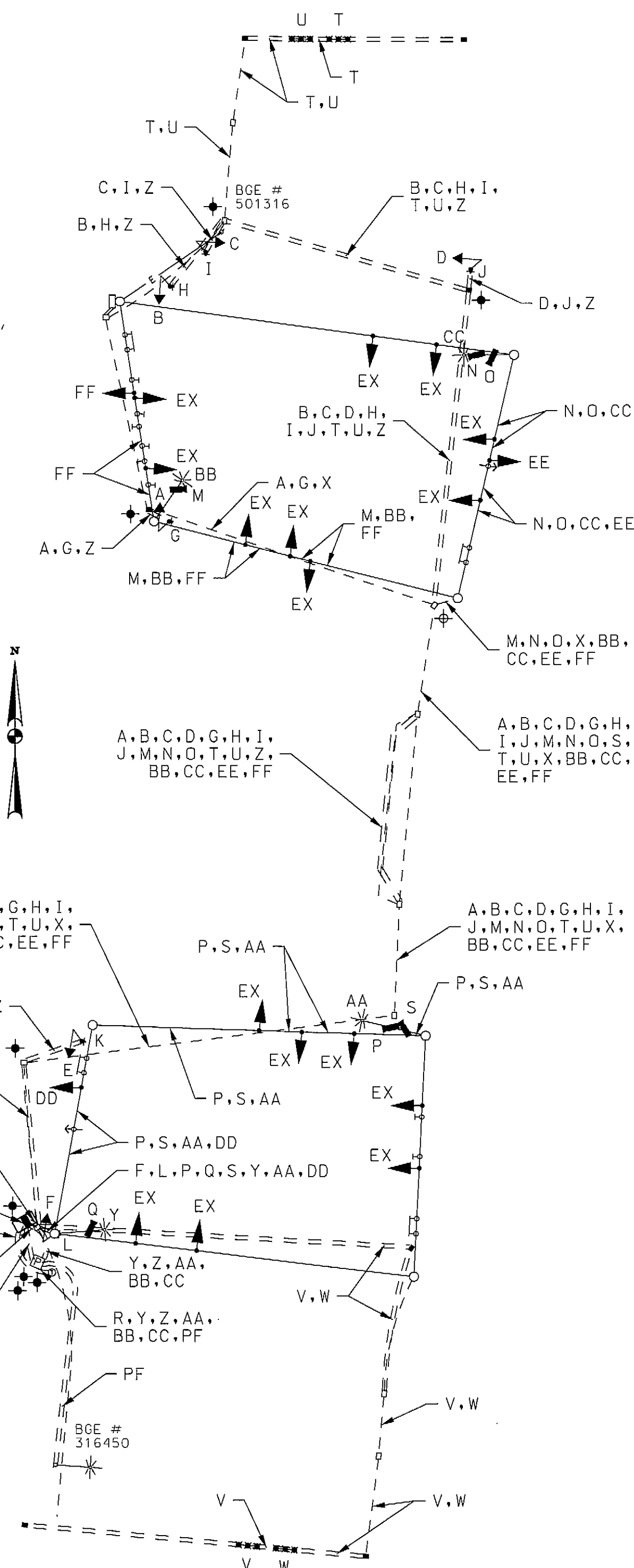
PHONE DROP:

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7631 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE AND PHONE NUMBER.

A. EQUIPMENT TO BE SUPPLIED BY SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
9016	4 CHANNEL DETECTOR AMPLIFIER	EA	1	
9104	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM	EA	1	
9110	UPS EQUIPMENT FOR "S" CABINET	EA	1	M.N.O.
9571	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 6 - R10-3(1) 9"X15"	SF	6	Q.S. U.V.
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.				
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
1001	MAINTENANCE OF TRAFFIC	EA	2	
5003	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS	LF	100	
5004	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	420	
5005	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	75	
6001	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH	LF	258	
6002	5 INCH CONCRETE SIDEWALK	SF	629	
6003	DETECTABLE WARNING SURFACE FOR CURB RAMPS	SF	97	
8001	12 INCH LED SIGNAL HEAD SECTION	EA	57	
8002	2-WIRE CENTRAL CONTROL UNIT	EA	2	
8004	8 INCH LED SIGNAL HEAD SECTION	EA	12	
8008	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	6	
8009	BREAKAWAY PEDESTAL POLE (ANY SIZE)	EA	5	
8012	EMBEDDED METERED SERVICE PEDESTAL	EA	1	
8016	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD	EA	6	
8024	REMOVE & DISPOSE OF EQUIPMENT (PER ASSIGNMENT)	EA	1	
8028	VIDEO DETECTION CAMERA AND CABLE ANY LENGTH	EA	6	
8033	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	70	
8036	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	LF	500	
8037	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	LF	300	
8038	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	345	
8040	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	6	
8042	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	735	
8045	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	LF	60	
8046	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	7	
8053	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	2,870	
8055	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	2,900	
8056	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	1,430	
8057	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)	LF	1,700	
8063	INSTALL CONTROLLER AND CABINET - BASE MOUNT	EA	1	

C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF THE CONTROLLER, WHICH SHALL BE RETURNED TO SHA.



DD,EE,FF	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	
A,B,C,D,E,F	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	
G,H,I,J,K,L	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	
M,N,O,P,Q,S	1P-BASED VIDEO DETECTION CAMERA CABLE	
R	1-CONDUCTOR ELECTRICAL CABLES (NO. 8 AWG-THHN/THWN), 3 RUNS	
T,U	NON-INVASIVE MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN CABLE	
V,W	NON-INVASIVE MICROLOOP PROBE SET WITH 500 FT. LEAD-IN CABLE	
Y,AA,BB,CC	2-CONDUCTOR ELECTRICAL CABLE, TYPE T/C (NO. 12 AWG)	
Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)	
EX	EXISTING CABLES (DISCONNECT, PULLBACK AND REROUTE FROM EXISTING CABINET TO PROPOSED CABINET)	
X	EXISTING GROUND WIRE	
PF	UNDERGROUND POWER FEED (BY BGE)	⊕ EXISTING GROUND ROD
PD	UNDERGROUND PHONE DROP	⊕ PROPOSED GROUND ROD

[illegible]

PHASE 1 AND 5	R	R	R	R	R	R	R	R	R	R	G	G	G	$\leftarrow G$	$\leftarrow G$	G	R	R	R	DW	DW	DW	DW	DW	DW	
1 AND 5 CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	DW	DW	
OVERLAP A	R	R	R	R	R	G	G	$\leftarrow G$	$\leftarrow G$	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
OVERLAP A CHANGE	R	R	R	R	R	Y	Y	$\leftarrow G$	$\leftarrow G$	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
OVERLAP B	G	G	$\leftarrow G$	$\leftarrow G$	G	R	R	G	G	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
OVERLAP B CHANGE	G	G	$\leftarrow G$	$\leftarrow G$	G	R	R	G	G	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 2 AND 6	G	G	G	G	G	G	G	G	G	G	R	R	R	R	R	R	R	R	R	WK	WK	DW	DW	WK	WK	
PED CLEARANCE	G	G	G	G	G	G	G	G	G	G	R	R	R	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW	FL/DW	FL/DW	
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
PHASE 3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	$\leftarrow G$	$\leftarrow G$	G	DW	DW	DW	DW	DW	DW		
3 CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW		
PHASE 3 ALT	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	$\leftarrow G$	$\leftarrow G$	G	DW	DW	WK	WK	DW	DW		
PED CLEARANCE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	$\leftarrow G$	$\leftarrow G$	G	DW	DW	FL/DW	FL/DW	DW	DW		
3 ALT CHANGE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW		
PHASE 4	R	R	R	R	R	R	R	$\leftarrow R$	$\leftarrow R$	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
4 CHANGE	R	R	R	R	R	R	R	$\leftarrow Y$	$\leftarrow Y$	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
PRE-EMPTION 1	R	R	R	R	R	R	R	$\leftarrow G$	$\leftarrow G$	G	R	R	R	R	R	$\leftarrow G$	$\leftarrow G$	G	DW	DW	DW	DW	DW	DW		
PRE-EMPTION 1 CHANGE	R	R	R	R	R	R	R	$\leftarrow Y$	$\leftarrow Y$	Y	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW		
PRE-EMPTION 2	R	R	R	R	R	R	R	R	R	R	G	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
PRE-EMPTION 2 CHANGE	R	R	R	R	R	R	R	R	R	R	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	R/L	R/L	R/L	R/L	R/L	R/L	R/L	R/L	R/D	DARK	DARK	DARK	DARK	DARK	DARK	

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
5. ALL PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
6. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.09 AND FIGURE 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
7. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
8. THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON. NOT CENTER OF POLE TO CENTER OF POLE.
9. PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.

MS. KIMBERLY TRAN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 841-1019

MR. JOHN S. MAYS
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
(410) 841-1013

MR. JAMES FOLDEN
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
(410) 841-1031

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF
TRAFFIC OPERATIONS
(410)787-7630

MR. ED RODENHIZER
CHIEF, SIGNAL OPERATIONS
(410)787-7650

MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS
(410)787-7676



REVISIONS		GENERAL INFORMATION SHEET			
		SCALE <u>NONE</u> DATE <u>AUGUST 2012</u> CONTRACT NO. <u>XY2245185</u>			
		DESIGNED BY <u>WFW</u>		COUNTY <u>ANNE ARUNDEL</u>	
		DRAWN BY <u>WFW</u>		LOGMILE <u>02010008.38</u>	
		CHECKED BY <u>BJG</u>		TIMS NO. <u>L318</u>	
		FAP NO. _____		TOD NO. _____	
TS NO. <u>3277D-61</u> <u>3278D-61</u>		DRAWING <u>SP-3</u> OF <u>3</u>		SHEET NO. <u>3</u> OF <u>5</u>	

BY: BJG